

WHAT IS CLAIMED IS:

1. An improved boot for use in sealing a constant velocity joint and ball spline joint assembly, the boot comprising:
 - a plurality of articulating convolutes;
 - a grease catching member;
 - a first stabilizing member joining the plurality of articulating convolutes and the grease catching member;
 - a plurality of plunging convolutes; and
 - a second stabilizing member joining the plurality of plunging convolutes and the grease catching member.
2. An improved boot as in claim 1, wherein the articulating convolutes are adapted to accommodate joint articulation to an angle of at least 15 degrees.
3. An improved boot as in claim 1, wherein the plunging convolutes are adapted to accommodate joint plunge to at least 45 mm.
4. An improved boot as in claim 1, wherein the first stabilizing member is adapted to ride approximately 1 mm above an inner race of the ball spline joint.
5. An improved boot as in claim 1, wherein the second stabilizing member is adapted to ride approximately 1 mm above an outer race of the ball spline joint.

6. An improved boot as in claim 1, wherein the constant velocity joint is a high speed fixed joint.
7. An improved boot as in claim 1, wherein the boot is adapted to accommodate vehicle installation at an angle of at least 15 degrees.
8. An improved boot as in claim 1, wherein the boot is adapted to accommodate joint operation up to approximately 7 degrees and 9000 revolutions per minute.
9. An improved boot as in claim 1, wherein the boot is adapted to accommodate compressive plunge of at least 15 mm and extension of 30 mm.
10. An improved boot as in claim 1, wherein the boot is adapted to accommodate joint plunge of at least 45 mm.
11. An improved boot as in claim 1, wherein the boot is comprised of a thermoplastic material.
12. An improved joint assembly, comprising:
 - a constant velocity joint;
 - a ball spline joint affixable to the constant velocity joint, the ball spline joint having an inner race and an outer race; and

a boot affixable to the constant velocity joint and the ball spline joint to seal and house the combined joints, the boot comprising:

a plurality of articulating convolutes;

a grease catching member;

a first stabilizing member joining the plurality of articulating convolutes

and the grease catching member;

a plurality of plunging convolutes; and

a second stabilizing member joining the plurality of plunging convolutes

and the grease catching member.

13. An improved joint assembly as in claim 12, wherein the constant velocity joint is a high speed fixed joint.

14. An improved joint assembly as in claim 12, wherein the assembly is adapted for use in a propshaft.

15. An improved joint assembly as in claim 12, wherein the articulating convolutes are adapted to accommodate joint articulation to an angle of at least 15 degrees.

16. An improved joint assembly as in claim 12, wherein the plunging convolutes are adapted to accommodate joint plunge to at least 45 mm.

17. An improved joint assembly as in claim 12, wherein the first stabilizing member is adapted to ride approximately 1 mm above the inner race of the ball spline joint.

18. An improved joint assembly as in claim 12, wherein the second stabilizing member is adapted to ride approximately 1 mm above the outer race of the ball spline joint.

19. An improved joint assembly as in claim 12, wherein the boot is adapted to accommodate vehicle installation at an angle up to approximately 15 degrees.

20. An improved joint assembly as in claim 12, wherein the boot is adapted to accommodate joint operation of up to approximately 7 degrees and 9000 resolutions per minute.

21. An improved joint assembly as in claim 12, wherein the boot is adapted to accommodate crash plunge of at least 30 mm extension and 15 mm compression.

22. An improved joint assembly as in claim 12, wherein the boot is adapted to accommodate joint plunge of at least 45 mm.

23. An improved boot for use in sealing a high speed fixed joint and ball spline joint assembly, the boot comprising:

a plurality of articulating convolutes adapted to accommodate joint articulation of up to approximately 15 degrees;

a grease catching member;

a first stabilizing member joining and contiguous with the plurality of articulating convolutes and the grease catching member, the first stabilizing member adapted to ride approximately 1 mm above an inner race of the ball joint to provide stability at high speed;

a plurality of plunging convolutes adapted to accommodate joint plunge up to approximately 45 mm; and

a second stabilizing member joining and contiguous with the plurality of plunging convolutes and the grease catching member, the second stabilizing member adapted to ride approximately 1 mm above an outer race of the ball spline joint to provide additional stability.